INDUCING OPERATIONAL SHOCK TO ACHIEVE QUICK DECISIVE VICTORY: HOW DOES THE AIRBORNE DIVISION CONTRIBUTE?

A MONOGRAPH
BY
Major Gary E. Luck, Jr.
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School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

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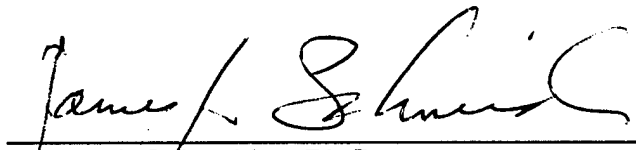

James J. Schneider, Ph.D. — Monograph Director

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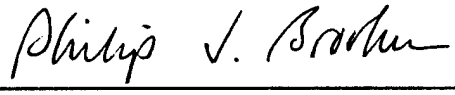

Philip J. Brookes, Ph.D. — Director, Graduate Degree Program

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ABSTRACT

How can the employment of an airborne division facilitate operational shock, as part of a Joint Task Force? By Major Gary E. Luck Jr., USA 45 pages.

This paper explores the capacity of an airborne division to inflict operational shock in mid to high-intensity conflict as part of a Joint Task force (JTF). The United States faces a multi-faceted and complex security environment in its new role as a dominant world leader. As the US enters the new millennium, it experiences a rapid increase in the frequency and demand to exercise military force in pursuit of vital national interests. The Army intends to maintain a small technologically elite force that can attain quick decisive victory at minimal cost to lives and national resources in order to maintain a viable and flexible response for emerging contingencies.

To implement the current National Security Strategy (NSS) and National Military Strategy (NMS) U.S. forces must maximize efficiency in resolving conflict due to the shrinking size of the force and the growing instability in the international security environment. Operational shock is a temporary or permanent condition that neutralizes the enemy's ability to achieve his aim. Inflicting shock at the operational level can allow US, coalition, or multinational forces to increase material and/or positional advantages that lead to operational and strategic end states. Inducing operational shock against a hostile military force is a product of bringing force to bear on the opponent's entire structure. The condition creates paralysis and the ensuing disintegration that can lead to quick decisive victory.

Operational shock is induced through the application of force and activity throughout the depth, width, and breadth of the battlespace, to neutralize the opposition's ability to function coherently or to achieve its aim. The airborne division is a critical component of the shock theory and enhances the JTF's capacity to inflict this operational condition in a contiguous or noncontiguous framework. The airborne division has unlimited reach, responsiveness and flexibility. The force facilitates the destruction of the enemy's center of gravity, extend lines of operations to the maximum depth, seizes and controls decisive points, and extends the culmination point. Further, the force acts as an enabler, by enhancing the operational dimensions of combat --time, tempo, depth and synchronization.

The Monograph asks the question: How can the employment of airborne forces facilitate the attainment of operational shock? To answer the research question the paper defines how operational shock is achieved and determines the employment capabilities of airborne forces. Classical and contemporary theory are reviewed to strengthen the understanding of the operational theory. The review covers a selected WW II campaign that demonstrates the presence of operational shock. Chapter IV reviews the doctrine and capabilities currently provided by an airborne division. This chapter evaluates the capacity of an airborne division to facilitate shock in terms of operational principles and design.

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I. Introduction

> *The concept of **simultaneity** and **depth** are foundations of deep operations theory. The intent is to bring force to bear on the opponent's entire structure in a near simultaneous manner that is within the decisionmaking cycle of the opponent. The goal is to overwhelm and cripple enemy capabilities and the enemy will to resist.*[1]

Inducing operational shock against a hostile military force is a product of bringing force to bear on the opponent's entire structure. This condition creates paralysis and the ensuing disintegration that can lead to quick decisive victory. The purpose of this paper is to explore the capacity of airborne forces to inflict *operational shock* in mid to high-intensity conflict as part of a Joint Task Force (JTF). Operational shock is a temporary or permanent condition that neutralizes the enemy's ability to achieve his aim. Inflicting shock at the operational level can allow US, coalition, or multinational forces to increase material and/or positional advantage in concert with other instruments of power to attain operational and strategic end states.

There are at least two essential preconditions for a quick decisive campaign.[2] First, military operational aims and end-states must satisfy the conditions needed for political success in the form of strategic aim and objectives. The objectives strategically and operationally must be integrated and mutually supporting to establish a coherent *universal aim*. Second, there must be a significant asymmetrical advantage in the cybernetic and moral domains of war expressed in terms of doctrine, organization, experience, training or leadership. The key to attaining decisive results from these advantages, is to understand that these advantages are fleeting, that they must be recognized in the context of the specific crisis and that the advantages must be employed against an enemy vulnerability.[3]

The effectuation of *shock* creates a *new pattern of defeat* that supplements and complements the traditional strategies of *annihilation* and *exhaustion.*[4] Traditionally strategies of annihilation were attrition-based and, likewise, strategies of exhaustion were maneuver-based to create expenditure of resources over a long period of time. The way to defeat a modern military system is not by aiming at its destruction (as was claimed by Clausewitzian philosophy for more than one hundred and twenty years) but rather through the notion of operational shock.[5]

The Soviet military intellectuals in the 1920's were the first to view a military force as a system of interconnected components, taking on a distinct form to achieve a universal operational aim. Soviet analysts discovered that by neutralizing a rival system's capability to achieve its aim, a condition of shock (defined in Russia as *udar*) could be induced. The effectuation of shock would create paralysis and consequently disintegration of the opposing force's ability to function.

The theoretical concept of *cybershock* extends the Soviet operational shock theory into the information age.[6] This theory proposes that shock can be inflicted through the manipulation of the opposition's information processes. Manipulating these information processes denies the enemy the ability to see himself, the opposition, or reality as it really exists. Neutralizing the rival's capability to perform human control functions (information processes) complements the strategies of attrition and maneuver that work together with cybershock to overwhelm the enemy –inducing paralysis and ultimately disintegration. The cybernetic shock theory expresses shock and paralysis as a *blackout effect* created through the degradation of the rival's military system to see itself, the adversary, and function within its hierarchical structure.

Why is this important? Throughout history nations have exerted great energy to determine how to achieve quick decisive victory in war with minimal expenditure of national resources. The international security environment has evidenced the disintegration of global peer threats to US military dominance. Procurement of information age technology and modernization in the form of Force XXI and the AAN depicts a small qualitatively superior force capable of responding across the full spectrum of conflict (Full Spectrum Agility). To implement the current National Security Strategy (NSS) and National Military Strategy (NMS) U. S. forces must maximize efficiency in resolving conflict due to the shrinking size of the force and the growing instability in the international security environment.

In the role of a world leader in this new multi-faceted and complex international environment, the US is experiencing a rapid acceleration in frequency and in demand to exercise military force in pursuit of vital national interests. The Army intends to maintain a small technologically elite force structure at least through 2025 that can attain quick decisive victory at minimal cost to lives and national resources in order to maintain a viable and flexible response for emerging contingencies. Emerging technologies for precision deep fires possess vulnerabilities and limitations brought about by geography, weather and collateral damage considerations. It is not evident that precision weapons have the same psychological impact as the physical presence of forces.

Operational shock is induced through the application of force throughout the depth, width, and breadth of the battlespace to neutralize the opposition's ability to function coherently or to achieve its aim. Emerging technology and doctrine, especially in the area of information operations, is providing the Army a greater capacity to apply

force in depth by both lethal and nonlethal means. In a nonlethal function, information operations synchronizes the application of deception, psychological operations, special operations, electronic warfare, civil affairs and public affairs to degrade and disrupt the coherency of the enemy system while complementing the application of lethal force. The lethal reach of the Army in the form of precision munitions is expanding into the operational depth through the enhanced capabilities of MLRS and ATACMS.

The airborne division is a critical component of operational shock theory and enhances the JTF's capacity to inflict this operational condition in a contiguous or noncontiguous framework. The airborne division has unlimited reach, responsiveness and flexibility. The force facilitates the destruction of the enemy's center of gravity, extend lines of operations to the maximum depth, seizes and controls decisive points, and extends the culminating point.

The airborne division enhances the operational principles of fragmentation, simultaneity, and momentum by creating mass throughout the depth of the theater of operations. This force will optimize the operational dimensions of combat when the Army attains the ability to insert mobile forces immediately behind the parachute assault with programs like the armored gun system cut in 1997. Airborne forces in their current state possess an awesome capacity to facilitate the operational conditions that induce shock and paralysis.

Methodology

The question this monograph seeks to answer is: How can the employment of airborne forces facilitate the attainment of operational shock? To answer the research question the paper must define how operational shock is achieved and determine the

employment capabilities of airborne forces.

In chapter II theory and doctrine will be reviewed. Chapter II will explain a composite theory of operational shock. Classical and contemporary theory will be reviewed to strengthen the understanding of the operational theory. The Soviet Deep Operation Theory will provide the centerpiece for discussing the concept of operational shock. The precepts of maneuver warfare and cybershock will be used to refine the concept. Current doctrine will be examined to learn the extent the theoretical concept of operational shock is represented. This chapter will conclude by determining which factors must be present to create operational shock.

Chapter III is a brief historical review. The review will cover a selected WW II campaign that demonstrates the presence of operational shock. The purpose is to demonstrate historically how airborne forces facilitated the achievement of operational shock. The employment airborne forces in forced entry role within the spectrum of peace enforcement operations will be examined because of the current and potential long-term relevance.

Chapter IV is a review of the doctrine and capabilities currently provided by an airborne division. This chapter will evaluate the capacity of an airborne division to facilitate shock in terms of operational design. The Soviet operational principles of fragmentation, simultaneity, and momentum together with the current doctrinal operational dimensions --combat power, time, tempo, depth, and synchronization will provide the criteria to evaluate the airborne division's capabilities.

II. Operational Shock Theory

The origins of the operational shock idea derived from an advanced system approach, from a critical identification of the universal nature of war, and from a thorough apprehension of the limitations imposed by the strategic reality.[7]

The idea of operational shock originated from an advanced Soviet theory of operational art in the early twentieth century. Sixty-five plus years separate us from the year of the first edition of the book, Strategy, one of the most significant of the works by the Russian and Soviet military historian and theorist, Aleksandr Andreevich Svechin.[8] Svechin introduced the term "operational art" as the bridge between tactics and strategy, the means by which the senior commander transformed a series of tactical successes into operational bounds linked together by the commander's intent, which was aimed at the attainment of strategic success in a given theater of military actions.[9]

The systemic nature of the environment and its relationship to the operational level of war evaded western military thought until the late 1970s. The historical debate over the inability of the active defense doctrine to solve the eastern European situation created the impetus to introduce the Soviet Deep Operation theory to the US Army. The influence of Soviet military theory and the idea of creating shock as a defeat mechanism had a profound impact on U.S. Army "Airland Battle" doctrine.

The Evolution of Soviet Deep Operation Theory

The theoretical concept of *operational shock* emerged as a key component of Soviet "operational art" during a cognitive revolution of military thinking in the 1920s and 1930s. In the course of the revolution, generated by the Russian Civil War, the paradigm of the integrated battle of annihilation, which had dominated military thought for hundreds of years, was replaced by a newer paradigm of the *operational strike*

maneuver.[10] The conceptual breakthrough that negated the traditional theories of war, culminated in the mid-1930s in the Deep Operation theory –a doctrine which led to the establishment of airborne and mechanized operational formations, the conduct of large-scale maneuvers, and the acceleration of technological development.[11]

The theoretical achievements came to an abrupt end in 1937 with the physical extermination of the leading military and civilian proponents of the Soviet Deep Operation Theory. Not until 1942 in the aftermath of the German spring offensive, that inflicted appalling defeats and hardships upon the Red Army, was the advanced theoretical concept revived.

The revival of the operational theory provided the Red Army with the basis for defeating the *Wehrmacht* and ending the myth of Blitzkrieg's invincibility.[12] The Soviet Deep Operation theory laid dormant until the second half of the 1960s due to Stalin's repression of operational thought and the emergence of the nuclear option. The revitalization of the theory in 1964 prompted new intellectual and material growth of the theory lasting into the 1980's to the end of the Cold War.

Impact on the Evolution of US Operational Art

The Soviet Deep Operation theory was finally brought to the forefront of military thought in the US by a group of civilian and military reformers that entered the intellectual debate over the publication of FM 100-5 Operations, 1976. The Active Defense strategy described in the 1976 version of FM 100-5 was an impromptu tactical response to winning in the European Theater from a position of strategic inferiority. This conclusion came through the misinterpretations of the 1973 Arab-Israeli War, the theoretical underpinnings related to the strength of the defensive form of war, the reliance

on technology to achieve firepower superiority, and the race against time to restructure an army in the face of a growing Soviet threat.[13]

A small community of civilian intellectuals –Steven Canby, Bill Lind, Norman Polmar, Pierre Sprey, retired Air Force Colonel John Boyd and others generated one of the most creative professional debate that ever occurred in the history of American military thought.[14] The intellectual debate surrounding the viability of the active defense lasted eight years. As the debate gained momentum, the Soviet Deep Operation theory promulgated by General Donn Starry, the new TRADOC Commandant, and the civilian reformers took center stage.

The issues of depth, echelonment, fragmentation, operational breakthrough, simultaneity, momentum, deception, surprise and the operational logic of neutralizing the rationale of the rival maneuvering system eventually gained precedence in the debate. The cognitive crisis initiated by Bill Lind's critical attack on the 1976 manual, developed into a long comprehensive discussion, which led to the evolution of Airland Battle doctrine. The Soviet Deep Operation theory became central to its development.

Systems Understanding - Key to Advanced Theory of Operational Art

Using a systemic logic or systems thinking for the interpretation of Soviet Deep Operation theory provides for a coherent perception of the entire act of war –from abstract thinking and definitions of policy to the mechanical aspects of combat.[15] Systems thinking is a conceptual framework, a body of knowledge and tools that have been developed over the past fifty years, to make the full patterns clearer, and to guide in changing patterns effectively.[16] This implies that the world can no longer be perceived accurately as a sum of parts (Newtonian paradigm) but must be viewed in terms of

patterns and relationships to understand the interconnectedness of the changing world.[17]

A living system, such as a military force, is a complex adaptive system that interacts with the environment and the rival force. A systemic understanding is required to recognize that the environment is made-up of interconnected systems and subsystems. Systems are made up of multiple interconnecting and interacting components or variables. If a particular variable is crucial to the functioning of the system it is considered a critical variable.[18] These variables if altered, will exert a major influence on the status of the entire system.[19]

This leads to the idea that when force is applied to one or more components of a military system the entire system is effected, not just the components involved. The concept of systems thinking is relevant to the Soviets' operational aim, which is to break the opposition's military system, to induce shock, paralysis and ultimately disintegration. Information age technology is allowing the military force at all levels to become more intertwined with other components, allowing for greater synergy and likewise greater susceptibility to shock.

The relationship of systems logic to the conduct of war started to emerge in 1924 following the Soviet Civil War and led to the development of a *universal theory for operational maneuver*. The military intellectuals involved included –M.V. Frunze, F.F. Novitskii, N.E. Varfolomeev, B.M. Shaposhnikov, A.A Svechin, A.I. Verhhovskii, M.N. Tukhachevskii, and V.K. Triandafllov. The theory's evolutionary process uncovered a "universal system logic in the field of modern military systems" and the specific characterization of operations.[20]

The Soviet understanding of the systemic environment of war included the

following elements, which led to the development of operational principles. First, the synchronization of combined arms elements, both mechanically –in organization and cognitively –through a nested operational aim, created synergy at the tactical and operational level. Second, the components of a military system are interrelated and attain form, in the course of an operation, based on the system's aim –offensive or defensive. The form (disposition) a military system takes on, is directly related to the operational goal or aim, creating a cognitive fabric, which regulates and controls the material form including troops, equipment and logistics –that is, the design of the theater and disposition of the force. The cognitive fabric represents the force's collective understanding of purpose and concept towards attaining the overarching aim.

The Soviet theoretician's understanding of the systemic environment of war led to the idea of operational shock (*udar*). Operational shock is attained by a succession of blows aimed at the rival system's depth to neutralize the rival system by annulling its ability to attain its aim.[21] This abstract yet logical formula for defeating modern armies or military systems substitutes the *traditional idea of destruction.*

Soviet Deep Operation Theory --Glubokaia Operatsiia

The Soviet's unique understanding of a systemic logic and the idea of depth led to identification of three universal components relevant to any *comprehensive operational process.*[22] The performance of these components must be integrated mechanically and cognitively along a unified axis of action.[23] The three universal components that make up the operational process are called the leading echelon (eshelon atakii) or holding echelon, the echelon for developing breakthrough (echelon razvitiia proryva –*erp*) and the echelon for holding the rear (operativnoe skovyvanie tyla –*desant*).

The leading echelon would be comprised of a heavily mechanized combined arms force with the capacity to fix defending rival forces along a broad front and to penetrate the tactical depth vertically in specific areas. The *erp* is comprised of a heavily armored force with sufficient sustainment to penetrate into the operational depth. The desant echelon represents an airborne force that creates an offensive capability at the extreme limits of the operational depth.

The leading echelon was designed to penetrate the opposition's tactical depth to facilitate the breakthrough of the *erp* into the operational depth. The purpose of the *erp* is to create a deep center of gravity in the opposition's rear, reinforcing success and the effects of fragmentation, to separate the tactical echelon from the operational echelon. The desant echelon was designed to mark the maximum range of depth for the operation to facilitate fragmentation, simultaneity, and momentum by conveying success in depth and frustrating the rival's maneuvering capability.

The design of the force and employment of these three universal components was developed through systems analysis and the determination of a universal aim. The Soviet theoreticians determined there were two options constituting the universal aim in war: seizure of political assets and the defense of such assets. In determining that creating correlative or reciprocal effect against the positive or negative aim of the rival system severely inhibited the systems functioning, the idea of *udar* originated. The Soviet Deep Operation theory focused everything to the achievement of this end --operational shock.

Following the discovery of universal aim, the Soviets contended that the idea of *operational shock* was best expressed through the mechanical pattern of *obkhod* --turning over or turning movement. This is achieved by introducing a strike mass or mass center

beyond the defender's center of mass creating a barrier between the operational reserve and the tactical depth. This action attacks the defending commander's consciousness, fabricating the recognition of vulnerability and the inability to control the situation.

Attaining the mechanical pattern of *obkhod* through the activity of three universal components would create a *deep transcending effect* that neutralizes the systems ability to function at an operational level. The synergy created by the three operational components pre-empts the defender's ability to respond. The effectuation of these conditions through an operational means appears to be a more decisive exercise of force instead of utilizing smaller and more numerous entities incrementally to achieve operational success.

The three operational components were organized to negate the rival systems capability to achieve its aim through the exercise of three principles or *elements of operational maneuver –fragmenting strike*, *simultaneity*, and *momentum*. These elements translated the idea of *udar* into practical terms of maneuver.[24] The theory has thus manifested a singular operational aim, three unique operational components and now three elements of operational maneuver to effectuate operational shock.[25]

The idea of fragmentation is achieved by severing physical coherence along the breadth of the tactical front, between the tactical and operational depths, and concurrently between the operational and strategic depth of the operation. Attacking the operational cohesiveness of the rival system neutralizes the mechanisms creating its cohesiveness. Neutralizing the cohesiveness of the rival system creates a sense of cognitive shock, the paralysis of physical mechanisms and ultimately disintegration of the force.

Fragmentation is achieved by the columnar concentration of force along specific points of a continuous defensive front. The systemic logic of aim creates synergy among

the three universal components allowing tactical fragmentation to facilitate operational fragmentation with the exploitation of the *erp* and successive columns into the operational depth. Synergy accelerates the progressive disintegration of the rival system and effectuation of collapse. The breaking of the tactical-operational coherence allows for severance of the strategic-operational command system by hindering the flow of information, reserves and logistics from the strategic context.

The application of simultaneity, the second element of operational maneuver, was believed to yield the highest degree of synergy and centered on the idea of system paralysis. The formulation of the desant echelon emerged as Tukhachevskii and his colleagues sought to overcome the restrictions of columnar configurations and to address the problem of operational containment. The main contribution made by the principle of simultaneity to the effectuation of the operational shock was the frustration of the opponents maneuvering capability.

The effects of simultaneity created independent attacks against each of the defensive system's components, preventing any hierarchical synergy, preventing retrograde as an option to reestablish aim, and stretched rival fighting resources to the breakpoint.[26] This leads to the neutralization of the rival system's aim by pre-empting his capacity to respond.[27] The desant echelon through the effect of simultaneity gave birth to the importance of operational synergy. This provides the rationale for airborne forces to facilitate shock.

The concept of momentum was developed, by perceiving velocity in terms of depth, time, and mass.[28] Momentum was achieved through the combined actions of the holding echelon –drawing the main defensive mass to the front and the strike element

penetrating into the depth at the flanks. Momentum creates an operational movement differential (moving with greater speed and mass in the enemy's depth), which disrupts the opposition's ability to attain goals, forces the opposition to focus on saving his force, and creates the condition of turning the rival force out of his present posture.[29]

Attaining momentum in the Soviet Deep Operation theory meant introducing an operational component beyond the defender's center of mass to create a deep center of gravity in the enemy's rear. The attainment of operational momentum in the form of a deep center of gravity attacks the rival force mechanically and cognitively. The holding echelon and the desant echelon mutually contribute to the attainment of momentum.

The cognitive degradation achieved through operational momentum is evident in the cybernetic and moral domains of war. The cybernetic domain pertains to intellectual depth (nested intent), method of control and system of command. The cybernetic domain can be fractured, by applying physical force throughout the depth, against the rival systems components. The moral domain that deals with the quality of soldiers, motivation to fight, and morale of the unit is influenced by a conscious state of surprise, ineffectiveness, and perceived operational weakness, which further creates fear, shock, paralysis and possibly disintegration.

The Soviet Deep Operation theory is expressed in the idea of functioning within the parameters of an operational aim, employing operational components, and adhering to principles of operational maneuver to effectuate the synergy that creates operational shock. This operational theory turns away from traditional patterns of firepower and attrition to focus on the effectuation of shock by exercising patterns of attrition and deep maneuver to break the rival system and attack the moral domain.

What conditions, then, must be present to create a state of operational shock? Surprise facilitates the emergence of shock and creates its depth and resonance. Surprise is achieved through the elements of deception and tempo. Tempo is an expression of velocity and depth. Tempo in relation to time, space and mass creates momentum. Operational momentum attenuates the rival systems capability to achieve its aim.

Operational momentum is the key element to the effectuation of operational shock. Momentum preempts the ability of the rival to respond. It further dislocates the orientation of the rival system's components. The effect of turning over or dislocation accentuates the shock created by surprise. The degree or expanse of shock combined with the effects of fragmentation creates paralysis and ultimately disintegration.

The echelon of *desant*, the focus of this theory, represents the deep airborne echelon. The echelon of desant expresses the Soviet theoretician's creative approach towards the idea of depth, but also to simultaneity, tempo, and momentum within the operational process.[30] According to Soviet Deep Operation Theory the desant echelon would mark the maximum range of depth attained by friendly forces in the course of an operation.

This echelon has the capacity achieve operational depth while avoiding the physical friction and time consumption created by moving over land. The use of the desant to attain the maximum range of depth is intended to break the operational coherence of the rival system by introducing a power vector that can maneuver in the enemy's rear. This activity eliminates the defender's freedom of maneuver, dislocates combat power and reinforces the momentum of the attacker's advancing main maneuver element –*erp*.

The desant echelon heavily contributes to the operational principle of simultaneity by conveying success in the depth of the operation. It is instrumental in fragmentation to the degree it can delay, interdict, fix or block operational components of the enemy system. The desant accentuates momentum to the degree it neutralizes the rival system's movement differential by negating the opposition's freedom of deep maneuver. The desant plays a key role in all three operational principles –fragmentation, simultaneity, and momentum and thus is an integral part of the operational maneuver process.

Relevance of Operational Shock to Classical Theory

Clausewitz considered war in two distinct forms –the theoretical level of absolute war where each side used all means available to destroy the other; and war as it actually exists, limited by political policy, social (cultural and moral), and economic constraints, and numerous other factors like fog and friction. Since destructive processes will always be limited unless national survival is at stake, attaining victory by purely attrition and annihilation processes will be difficult.

Military force must be designed to attack all three domains of war –physical, cybernetic, and moral through the balanced application of lethal and nonlethal force through forms of attrition, maneuver and shock. The Army seeks to define a doctrine that allows a small qualitatively superior force the capacity to defeat numerically superior forces in a broad range of conflicts. This implies that the sheer magnitude of the theater and the increasingly distributed and dispersed nature of operations will challenge attrition-based models.

The Clausewitzian meaning of destruction is often misinterpreted to mean solely the physical destruction of the enemy force.

> *The fighting forces must be destroyed: that is,* ***they must be put in such a position that they can no longer carry on the fight****. Destruction may be merely a means to some other end. When one force is [perceived] a great deal stronger than the other, an estimate may be enough, causing the weaker side will yield at once. Engagements do not always aim at the destruction of the opposing forces. Objectives can often be attained without any fighting at all but merely by perception, this explains why entire campaigns can be conducted with great energy even* ***though actual fighting plays an unimportant part in them.***[31]

This passage foreshadows the doctrine of operational shock, where physical destruction is complemented by other dimensions of war to defeat the opposition. In this case the cybernetic and moral domains take on a higher precedence. The aim of operational shock is to put the enemy in a position where he can no longer carry on the fight through the balanced application (attrition, maneuver, and cybershock) of force throughout the depth of the operation.

Clausewitz contended the moral domain of war was often disregarded or overlooked because of its intangible nature and the inability to quantify its effects in the outcome of battle. Warfighters, BBC, JANUS and other simulated combat (software systems) exercises promote attrition-based defeat mechanisms because of the way the software is setup. Simulations are not representing cybernetic and moral factors. Clausewitz asserts further, "military activities must be directed against material and moral forces simultaneously." Entering the twenty-first century, the Army has a better appreciation of the intangible factors, but tends to focus heavily towards the attrition-based application of combat power instead of a maneuver-based application designed to attack physical vulnerabilities and the enemy's moral force. The theoretical concept of operational shock portrays an extremely balanced attack on physical, cybernetic, and moral domains.

Clausewitz did not give the element of surprise great precedence, though he understood the importance of attacking the enemy's morale; at that time he felt that deception and surprise were rather lawless endeavors, not within a formal code for prosecuting war. Clausewitz tended to equate surprise with tempo, while acknowledging that the greater the tempo of an operation, the greater the potential for surprising the enemy.

Another classical theorists, Sun Tzu, asserts, "Thus the highest realization of warfare is to attack the enemy's plans; next is to attack their alliances; next to attack their army; and the lowest is to attack their fortified cities."[32] Sun Tzu recognized the superiority of visualizing the enemy's aim, preempting his actions and creating positional advantage. By attacking the enemy's aim or plans through the employment of combat power, a force can neutralize the rival's capability to achieve its aim and thereby induce shock.

Sun Tzu captures a classical form of operational shock by elevating the idea of defeating the rival force without fighting as the highest acumen of the military artist. This statement elevates the idea of fighting the enemy's plan through the skillful employment of forces to attack the enemy's will. Sun Tzu believed strongly in attaining decisive force ratios that lead to overwhelming the enemy by employing deception and achieving surprise. He further alludes to the idea of the desant in his discussion of how orthodox (infantry) and unorthodox forces (light armored horse cavalry) complement each other in achieving the concentration of decisive force, foreshadowing the idea of deep maneuver, speed and agility.

One of Sun Tzu's greatest perceptual insights of war concerns "strategic power",

which he described as "the sudden onrush of water cascading from mountain peaks." The idea captures the formless configuration of troops, the creation of a favorable imbalance of power, the concentration of forces on specific targets, and the direction of all energy towards the decisive objective.[33] Sun Tzu's understanding of strategic power is represented in Soviet Deep Operation Theory in terms of operational aim and the imbalance of power beyond the enemy's mass in order to attain shock, paralysis, and ultimately disintegration.

J. F. C. Fuller understood that the true object in war was to establish a more perfect peace and not the physical destruction but mental submission on the part of the enemy. Fuller thought that the strategy of annihilation was popular because of mental lethargy, "for to think like a wild beast is easier than to think like a philosopher". Fuller stated, "War will be raised little by little from the cockpit of the physical struggle into the spheres of intellectual and moral conflict."[34] In other words, a strategy of attrition is costly, resource intensive, patterned, and inefficient. For Fuller, war becomes an intellectual dogfight aimed at the mental submission of the enemy.

Contemporary Theory of Cybernetic Shock

"Cybershock" is a theoretical concept developed by Dr. James J. Schneider, professor of Military Theory at Fort Leavenworth that represents a technologically advanced and comprehensive form of shock, which complements and expands the Soviet theory. The cybernetic shock theory is relevant in a wide spectrum of conflict and at all levels of war. Exercising the principles of cybershock with the operational principles of the Soviet theory creates a comprehensive operational framework.

The Soviet theory concentrates on the manipulation of operational components

(physical mechanisms) to attack the physical, cybernetic and moral domains of the rival system, through the patterns of attrition and maneuver. Dr. Schneider's theory puts greater emphasis on attacking the cybernetic domain through nonlethal means (OPSEC, IO, EW, PSYOPS and deception) in conjunction with patterns of attrition and maneuver to induce shock.

The term *cybernetic* deals with the *human control functions* related to complex electronic and communications systems dealing with the transfer of information. Cybershock is the systemic paralysis of an army through the loss of its ability to direct and control itself, which is analogous to neutralizing the rival systems ability to achieve its aim.[35] The "cyber" concept defines a temporal state or condition induced on a military system by a more comprehensive means than the traditional patterns of attrition and maneuver.

Hans Delbrück's comprehensive study of warfare from the Persian Wars in 500 BC to the end of the Napoleonic era in 1815, concluded that the whole history of warfare could be expressed in two patterns. First, the strategy of annihilation aimed at the destruction of an enemy. Second, the strategy of exhaustion aimed at the rival's moral and logistical collapse through a combination of battle and maneuver.[36]

The nature of the new modern military system is characterized as one that operates in a highly dispersed and distributed form. The military system is interconnected by an intellectual fabric (constituting information) and highly goal oriented within its hierarchical structure. It possesses controlling mechanisms that are learning and adaptive. The system creates form or attains its disposition based on information and aim and is algorithmically complex –meaning that the number of tasks

or steps necessary to defeat an enemy has increased dramatically.[37] Dr. Schneider asserts there are numerous aspects of complexity, but all eventually link to the way *a complex adaptive dynamic system* ***uses information***.

The emergence of complex military systems created a new pattern of defeat that placed cybershock and paralysis on a par with attrition and annihilation on one hand and maneuver and exhaustion on the other.[38] The cybershock-paralysis defeat pattern acts synergistically to supplement and complement attrition and maneuver patterns.[39] Cybershock induces deep systemic paralysis throughout a complex military system by neutralizing its ability to direct and control itself effectively.[40]

Cybershock can create paralysis in five ways: first, by denying the enemy complete information about both himself and the adversary through the exercise of deception, operations security, and psychological operations; second, by employing electronic warfare (EW) assets to destroy the organizational coherence and cohesion of the target; third, through the exercise of active and aggressive reconnaissance, the most critical element in the struggle for information, blinds the enemy; forth, by creating shock through the element of surprise, which in turn stresses the military nervous system and creates a broad state of panic; and finally the tempo of operations induces a kind of cybernetic stupor in the enemy –overloading his entire nervous system and creating general dissonance.[41]

The cybernetic shock theory extends and broadens the Soviet theory's capacity to induce operational shock. Both are based on a systemic logic that attacks the ability of the rival military system to function. The Soviet operational shock theory is a systemic strategy predicated on the physical effectiveness of the force, a universal operational aim

and principles, and patterns of attrition and deep maneuver to induce shock. The cybernetic shock theory is also a systemic strategy predicated on attaining shock and paralysis through the degradation of enemy information processes. Cybershock creates a blackout effect by degrading the rival systems ability to see itself, the adversary, and communicate within its own hierarchical structure. The Soviet *operational shock* theory and the *cybershock* theory are supporting and complimentary –providing a systemic approach for defeating the rival system.

Operational Shock in Current Army Doctrine

The Army's current operational doctrine represented in the 1993 version of FM 100-5, has refined and expanded the expression of American "operational art" that originated in the late 70's and emerged as written doctrine in 1982. The current operational doctrine does not explicitly communicate the concept of *systemic logic* or *operational shock* as a means of defeating the opposing force. Significant controversy continues over several critical doctrinal terms including *center of gravity* and *decisive operations*, which could enhance the application of systems logic in defeating rival systems.

The term center of gravity is an analytical tool for the commander and staff to think about friendly and enemy sources of strength as they design a campaign and determine its objectives.[42] It is expressed as the hub of all power and movement upon which everything depends. Further, it is that characteristic, capability, or location from which enemy and friendly forces derive their freedom of action, physical strength or will to fight.[43] The current center of gravity concept creates a tendency to apply the analytical tool mechanically against a rival force rather than attacking or neutralizing the rival force

as a coherent military system.

The use of this analytical tool is moving towards a more systemic model with the help of emerging joint and service publications. The existing problem is related to statements like the following from FM 100-5, "The essence of operational art lies in being able to mass effects against the enemy's main source of power --his center of gravity, which he seeks to protect." The wording contained FM 100-5 creates an attrition-based understanding of doctrine for example, "the aim is to create conditions that allow for the concentration of firepower against the enemy's center of gravity by first negating the decisive points." Whether doctrine discusses attacking strengths or vulnerabilities, it over emphasizes attrition and under emphasizes maneuver.

The Army must create a framework, language, and model for visualizing the enemy as a military system of interconnected components of relative value. This will enhance the planner's conceptual understanding of the operational environment and promote a more comprehensive application of tenets, principles and combat functions directed to defeat a rival system through the mutual activities of attrition, maneuver and shock. Soviet Deep Operation Theory features the necessity of shock to defeat a rival military system.

Army doctrine expresses operational design in terms of center of gravity, lines of communication, decisive points and culmination as a framework for applying force against the opposing system. A stated objective is the application of combat power through the dimensions of space and time in a logical design that integrates firepower, PSYOP, deception, special operations, and maneuver forces to converge upon and defeat the center of gravity.[44] This statement does possess operational dimensions and elements

of systemic logic. However the language "converge upon and defeat the center of gravity" attenuates the systemic focus by emphasizing the necessity to concentrate superior firepower against a single entity.

The concept of the battlefield framework expresses the Soviet ideas of fragmentation, simultaneity, and momentum. The battlefield framework establishes an area of geographic and operational responsibility in terms of the area of operations, battlespace and battlefield framework –deep, close, and rear. Organizing the battlefield in such a manner allows for the application of lethal and nonlethal force throughout the entire depth of the operation, thus creating conditions corresponding to the Soviet operational principles of fragmentation, simultaneity, and momentum.

Doctrinal dimensions, which include time, tempo, depth and synchronization, are all consistent with the Soviet theory. US doctrine promotes the idea of synchronizing the effects of combat power to keep the enemy off balance, but not specifically to create dislocation or to turn the enemy out of his occupied position. Synchronizing the effects of combat functions against the rival force in depth to overwhelm him with firepower (attrition) is the primary theme of US doctrine. Thus, defeating the rival's ability to function takes precedence over the Soviet idea of neutralizing the opposition's aim and inflicting shock.

US doctrine identifies the offensive as the decisive form of war –the ultimate means of imposing the Army's will upon the enemy. Characteristics of the offense include initiative, agility, momentum, tempo, deep, rapid and simultaneous destruction of enemy defenses. Again, in the doctrinal discussion of the offense, the overriding theme seems to focus on the orchestration of combat power to destroy the enemy in depth. US

doctrine provides many parallels with the Soviet Deep Operation theory, but the idea of shock and attacking the moral domain of the enemy has less ascendancy.

So, what is distinctly different between the Soviet Deep Operation Theory and US doctrine represented in FM 100-5, Operations, June 1993? The similarities would seem extensive when considering the depth the US studied Soviet theory and doctrine during the Cold War. The presence of a systemic logic and operational focus is represented more definitively in Soviet theory. The Soviet theory promotes the application of force to attack the moral domain both physically and cognitively through the balanced exercise of attrition, maneuver and shock. The US doctrine discusses similar patterns, but is overwhelmingly concerned with the application of firepower throughout the depth of the operation and focused on the specified center of gravity to disrupt the rival system. In other words, the Soviets give greater precedence to operational momentum and turning over the rival system or forcing it away from its intended direction and aim to create shock.

The concept of operational shock is grounded in theory and represents a systems approach to understanding the environment and the application of force. The Soviet concept promotes a universal aim and principles that act to organize military activities synergistically, in multiple dimensions, to breakdown the adversary. The synchronized activities in time and space create a synergy that attacks the rival system and ultimately induces shock. To further clarify the theory, the next chapter will review a campaign that represents the operational concept.

III. Historical Review

The purpose of this chapter is to review a conflict where airborne forces facilitated the attainment of *operational shock.* Historical evidence will provide data for evaluating the current capacity of US airborne forces to facilitate operational shock. Shock compliments attrition and maneuver-based strategies to promote a concept that attains *quick decisive victory* with a small, qualitatively superior force. Quick decisive victory will be evaluated in terms of achieving purely military objectives and success, understanding the multifaceted nature of victory itself.

Germany Invasion of France, Belgium, and Holland WW II

The German Army General Staff and High Command (OKH) developed plan Operation Yellow on 19 October 1939 to: first, defeat a large portion of the French and Allied armies; second, to gain territory in Holland, Belgium, and northern France as a basis for prosecuting successful air and sea operations against England; and last, to create a broad protective zone for the Ruhr (an economically vital region).[45] The plan underwent four major revisions before reaching its final form 24 February 1940 (see Map 1)[46].

Germany needed a quick decisive victory to prevent having to fight on multiple fronts, while conserving resources for future campaigns. To do this the German Army needed to seize the channel coastline to negate the influence of England's air power and to sustain the fight deep into northern France. Airfields in Holland and Belgium would provide crucial bases of operation and enhance lines of communication to sustain offensive momentum. Operational momentum would attenuate without these critical bases of operation. Current doctrine also recognizes the significance of logistical

throughput in the operational dimensions of tempo, momentum, depth, simultaneity, and synchronization.

The earlier versions of Operation Yellow were highly criticized by General Rundstedt and his chief of staff, von Manstein, for lacking the strategic tradition of decisive encirclement and total destruction of the enemy and for its inability to achieve strategic surprise.[47] The earlier plans put the ***Schwerpunkt*** (German Army mass center, decisive force, center of gravity, or concentration of combat power) in the north, in order to attack around the Maginot Line north and south of Liege, then through Brussels to the coast. This conservative campaign concept focused on the rapid and direct seizure of coastal territory by utilizing the extensive road and rail infrastructure in that region.[48] This concept potentially would allow allied forces to fall back behind the Somme River still intact.[49]

Following months of deliberation and delays the decision was made to create the *schwerpunkt* in the south. Army Group A (three armies –45 divisions), which included the greatest concentration of mechanized forces ever assembled would attack through the Ardennes, across the Meuse River at Sedan and drive westward to the coast south of the Somme River.[50] Army Group B (two armies –29 divisions) now in a supporting role, would attack as originally planned through the northern coastal territories of Holland, Belgium, and northern France to complete the encirclement.[51] A large airborne contingent would be used in Holland to seize the Hague (political and military headquarters) and facilitate severing the Dutch Army's linkup with French forces.[52] Army Group C (two armies –19 divisions) attacks into the Maginot Line as a holding or fixing force.[53]

The evolution of thought that resides in the revised plan (version D) represented an operational design similar to what is prescribed by Soviet Deep Operation Theory. The ideas of deep maneuver, momentum, simultaneity, synchronization, surprise and shock are prevalent at various degrees in the final form of Operation Yellow. Deep operational and strategic maneuver is seeded in German theory and doctrine dating back to Generals Helmuth von Moltke and Alfred von Schlieffen. The German plan Operation Michael in World War I culminated prior to achieving operational penetration and potential envelopment, because of the inability both cognitively and physically to create the echelonment needed to exploit tactical success. The echelonment of combat power provides opportunities to accelerate tempo and momentum.

Over twenty years later, the German Army continued to wrestle with the theoretical concept of operational breakthrough and exploitation. Despite embracing the offensive, penetration, exploitation, envelopment and annihilation only von Manstein, Guderian and a few others understood the capacity of mechanized warfare to effect deep maneuver and shock. Most senior military leadership did not understand mechanized warfare believing that the armor and infantry must fight in mutually supporting roles and that armor provided a means of enhancing the infantry's momentum. In addition to being resistant to the precepts of maneuver warfare and its operational potential, the German Army possessed a relatively small mechanized force (two-seventeenths of the total force was mechanized). Adding to this, the German Army severely lacked mobility in mutually supporting combat, combat support, and combat service support elements.

Operation Yellow set conditions for operational surprise by showing considerable strength to the North in the anticipated direction of the main attack (deception), then

attacking with the schwerpunkt (Army Group A) in the south through the Ardennes. The Ardennes was thought to be impassable to mechanized forces due to the wooded hilly nature of the terrain and its small winding roads. Operational momentum would be achieved by surprise, concentration of combat power, combined arms, tactically proficient forces, synchronization, and simultaneity. German air power was to be employed in a predominately tactical role. The operational decisive point in plan Yellow was specified as the crossing of the Meuse River at Sedan, which created the opportunity for attaining operational momentum in the depth of the Allied defense.

At 0535 on 10 May 1940, the German Army launched an attack against Holland, Belgium, and France employing 93 divisions and 2,750 aircraft.[54] In Holland 4,500 parachutists and 12,000 troops of an air-landing division were used to seize vital bridges, airfields and The Hague –the center of political and military leadership (see Maps 2 & 3).[55] In Holland one armored division was used to maneuver deep, mutually supporting airborne forces. Ten additional divisions were used to crush resistance in Holland. The battle for Holland was over in five days.[56]

In Belgium, 500 airborne troops were used to seize two bridges over the Albert Canal and the fortress Eben Emael, which protected access across the wide unfordable Meuse River. Controlling these key pieces of terrain or operational decisive points allowed Army Group B to penetrate deep into Belgium (see Map 4). Eighteen days into the German offensive Belgium capitulated and 500,000 troops laid down their arms. Army Group A launching through the Ardennes crossed the Meuse on the 13th and by the evening of the 20th had moved within 50 miles of the coast. By 4 June the Allies had lost fifty per cent of their forces on the continent and more than 75 per cent of their best

equipment. The battle was over. On 5 June, the German Army turned south towards Paris, on the 22nd the armistice was accepted and on the 25th all combat ceased. The campaign lasted only forty-six days, but had been decided within ten.

The airborne force used in Belgium speared-headed Army Group B's assault by seizing and securing critical crossing sites along the Meuse. Though airborne forces were not employed extensively on the western front (one battalion –Belgium only), the force conveyed offensive success, simultaneity, and tempo, which strengthened operational level deception (depicting Army Group B as main effort) and enhanced the force's ability to attain operational momentum. These actions are typically measured in terms of tactical significance with respect to the force's purpose and depth. The operational significance of the airborne force is demonstrated in the ability to achieve surprise, rapidly seize key terrain, and enhance the offensive tempo. The offensive tempo attained in the north deceived and dislocated operationally significant forces and accelerated the level of momentum and shock Army Group A was able to achieve in the south.

The 4,500 paratroopers and 12,000 air-land forces employed in Holland represented the Soviet idea of *desant* by marking the maximum depth of the operation and contributing to the attainment of the theory's operational principles –fragmentation, simultaneity and momentum. The airborne forces met severe resistance and took heavy casualties on many of the drop zones and airfields limiting immediate localized success. The inability of the force to achieve overwhelming tactical success in the extreme depth of the operation does not negate its operational significance, though it is representative of the high risk and potential cost to such forces. The presence of force behind Holland's center of mass degraded Allied operational integrity by inducing fragmentation,

simultaneity, and the momentum of armored forces. The momentum achieved by 9th Panzer Division and the Waffen-SS intensified the condition of shock initiated by simultaneity and fragmentation.

The German Army defeated a qualitatively (in material only) and quantitatively superior force in just ten days. Martin van Creveld observed in *Technology and War*, that technology will only be decisive to the extent it is used to take advantage of the enemy.[57] To prevail in a swift dominant manner, one side must have a marked advantage over the other in the cybernetic and moral domain in order to apply the destructive process more precisely and efficiently than the others.[58] The US must maintain superiority in doctrine, training, organization and leadership in order to induce operational shock. The German Army achieved an asymmetrical edge in doctrine, training, leadership and experience during the inter-war period. The French Army's most dominant weaknesses were evidenced in doctrine, training, and a decisive reliance on fixed defensive positions.

Germany's offensive campaign induced shock by exercising the Soviet operational principles –fragmentation, simultaneity and momentum. The employment of airborne forces intensified the effects of simultaneity that enhanced fragmentation and momentum. The 9th Panzer Division in Holland and Army Groups A and B in Belgium and France created fragmentation in simultaneous operations that initiated the condition of operational shock. The massive penetration of Ewald von Kleists' Panzer Group, consisting of three mechanized army corps, created a center of gravity in the French Army's rear that threatened the destruction of the British Expeditionary Force. This action promoted a deep transcending condition of shock. The cybernetic shock theory is represented in the Wehrmacht's ability to deny the French Army information about itself,

as well as German deception concerning its operational aim and the location of the schwerpunkt.

The term Blitzkrieg was applied to the German Army's offensive operations following the invasion of Poland in 1939 by the western media. The criticism of Blitzkrieg as an operational concept focuses on the fact that the concept was not written as a formal doctrine or conceptualized by the majority of German military leadership. The concept was implemented by a few visionary elite's based on the writings of Fuller, Hart and their personal experiences of WW I. Though the German invasions of Poland, Holland, Belgium, France and Russia were not representative of a formalized doctrine or the force structure to support it (maneuver or logistics), the military operations reviewed in this case study clearly represent Soviet operational principles and the concept of operational shock. The next chapter will examine the airborne division's contribution to shock as an operational concept.

IV. Analysis

It is through the idea of airborne desant that the rationale of the Deep Operation theory is reflected at its best. By initiating the unfolding of the operational column to its maximal length, synchronously with progressive development of the ground maneuver, the desant echelon sought to carry out the principle of simultaneity and the succession of operational momentum.[59]

Airborne forces may be strategically, operationally, or tactically employed on short notice to DZs anywhere in the world, as a deterrent or combat force.[60] The German invasion of France, Belgium, and Holland demonstrated the strategic and operational capabilities of airborne forces in a high-intensity conflict. Airborne forces execute parachute assaults to destroy the enemy and to seize and to hold important objectives until link-up is accomplished. The parachute assault enhances the basic infantry mission: to close with enemy through the exercise of fire and maneuver, to destroy or capture him, and to repel his assaults by fire, close combat, and counterattack.[61]

Airborne forces have participated in almost all contingencies, in different capacities, since 1980 including Desert One, Urgent Fury, Just Cause, Desert Storm, Somalia, and Uphold Democracy. During the Gulf War, the 82nd Airborne Division attained operationally and strategically significant objectives in a region not ideally suited for airborne forces. First, as an entry force facilitating force projection and the build-up of combat power, then by securing forward operating bases during the ground offensive, the force enhanced logistical throughput and operational momentum. The 82nd Airborne Division was again given strategic and operationally significant objectives in Operation Uphold Democracy, before the environment changed from non-permissive too permissive on 18 September 1994.

Strategic Missions

Airborne forces can be tailored for strategic mobility and the rapid employment of combat power for offensive, defensive, stability and support operations. Additionally, the employment of airborne forces as a show of force is politically significant in a strategic context.[62] The force possesses almost unlimited reach and can strike important targets deep in enemy-held territory with little or no warning. These targets may be linked to political infrastructure and leadership, command and control, and related targets where physical control is required or collateral damage has significant importance. Strategic missions also include forced entry operations to seize airheads or ports of entry to facilitate the projection and build-up of combat power for follow-on ground or air operations.[63] Airborne forces have been exercised in strategic roles in operations Just Cause, Desert Storm, and Uphold Democracy.

Operational Missions

As the historical study demonstrated, airborne forces can be employed anywhere in theater to attain or facilitate the attainment of operationally significant objectives. Operationally significant objectives include seizing advanced bases to facilitate the build-up of combat power, to conduct large-scale raids that degrade enemy C2 or operational integrity, to deny enemy terrain or routes, to delay, disrupt, and reduce enemy forces, and to facilitate the tempo of more mobile forces.[64]

These objectives are linked to the operational commander's intent to enhance the operational dimensions of combat, including time, tempo, depth, and synchronization. In

addition, airborne forces contribute to other elements of operational art by extending lines of operations and operational reach, creating an indirect approach, seizing decisive points, facilitating attacks against the centers of gravity, and extending the culminating point. Airborne forces are essential to the Soviet operational principles of fragmentation, simultaneity, and momentum also demonstrated in Operation Yellow.

Fragmentation

The concept of fragmentation is both physical –through the application of combat power, and cybernetic –through the disruption of human controlled information processes. Both work synergistically to break the tactical, operational and strategic coherence of the enemy force. Airborne forces facilitate physical fragmentation by applying force in depth to create maneuver space, attain desirable force ratios, or to dislocate enemy combat power. These activities contribute to operational mobility and tempo by enhancing synchronization and simultaneity. Airborne forces can work with joint assets (air interdiction and long-range precision weapons) to degrade the enemy's operational significance by destroying infrastructure, C2 nodes, and forces.

Airborne forces can achieve operational effects and are employed when control of terrain is operationally significant. While both long-range munitions and air interdiction induce complexity and shock in the rival system, the presence of force has a greater psychological and dislocating effect. Deep effects can be enhanced by creating a capacity to immediately exploit the ground tactical success of an airborne force with more mobile forces or by generating light armored mobility into the airborne divisions force structure. Introducing a ground force (mass) into the deep operations area shapes the deep battle area for ensuing destruction of enemy forces by creating desirable force

ratios and enhancing operational momentum. The joint deep capabilities are orchestrated to optimize effects.

Airborne forces do require significant USAF support to include airlift, counter-air, close air support, tactical air reconnaissance, air interdiction, electronic warfare, and suppression of enemy air defense.[65] During the invasion of Panama 250 plus aircraft were airborne to facilitate parachute assaults and other simultaneous operations.[66] A significant amount of planning and resources go into the attainment of surprise, synchronization and force protection required for the successful insertion of airborne forces. Simultaneity enhances surprise and force protection. In 1940, German airborne units worked extensively with close air to shape the deep operations area for the attainment of fragmentation and momentum.

Simultaneity

The airborne force best expresses the idea of operational simultaneity because of its ability to bypass all land and sea obstacles and because it's unencumbered by the echelonment experienced by ground forces. Creating simultaneity through the synchronized activity of resources in time and space throughout the depth of an operation acts to induce the element of surprise and shock by overwhelming the rival system's capacity to protect itself, respond and attain its aim. Simultaneity is the application of both lethal and nonlethal force that attacks the physical, cybernetic, and moral dimensions of the enemy system. This activity preempts the enemy actions, disrupts the cognitive fabric of aim (intent and objective), and initiates the perception of vulnerability that precedes shock.

Complementing this physical attack is the ongoing cyber attack that denies the

enemy a perception of reality and diminishes the ability to control itself. The activities of information operations, psychological operations, electronic warfare, deception, civil affairs, special operations, and reconnaissance increase the enemy's perception of vulnerability --intensifying the inducement of shock. The orchestration of airborne forces with other joint force assets can attain these operational effects as well.

Momentum

The concept of momentum was generated as a systemic response to the traditional battlefield framework (contiguous linear front) that assumed depth and form based on aim. Momentum is the operational principle that intensifies the level of shock to a degree that neutralizes the enemy's capability to achieve its aim. This is accomplished by attaining mass and velocity beyond the rival's tactical depth. This destructive capacity in the form of mass and velocity accelerates the succession of shock into paralysis and disintegration. In other words, operational momentum has the greatest effect on the enemy's psyche, vulnerability, and ineffectiveness.

Simultaneity can create or facilitate fragmentation. Fragmentation creates the opportunity for attaining operational momentum. Airborne forces, predominately facilitate operational momentum indirectly through contributions to simultaneity and fragmentation. Operational momentum can be attained without fragmentation by performing deep maneuver or forced entry behind the enemy's mass center with an operationally significant force. JTF's perform this by employing combinations of amphibious and airborne forces in geographic locations that allow for the build-up of operational momentum.

Currently airborne forces can only create the conditions that would transform the

projection and build-up of combat power into operational momentum by seizing ports of entry, airfields, and forward lodgments. The Army as a component of the joint force must create the capacity internally or externally to the airborne division to rapidly build-up combat power in a highly maneuverable form immediately behind the parachute assault. This rapid build-up capability would accentuate inducing shock and paralysis while creating the conditions for operational momentum.

How much mass and velocity does an operationally significant force need, to attain the momentum needed to induce shock and the succession of disintegration? This force would assume a purely relative value. The force has to have the capacity to threaten a center of gravity or a decisive point that would lead to the neutralization of a center of gravity by some joint means. During the German invasion of France it equaled a panzer group consisting of three corps, in Desert Storm it equaled VII Corps, consisting of some five divisions. Arguably, these forces could have been significantly smaller, yet have created the same effect with the force multipliers currently present. So, it is not the size of the force, but the perception of vulnerability the force creates against a center of gravity or decisive point that is important.

In a noncontiguous environment the enemy force still attains its disposition based on a cognitively integrated aim. Separate enemy components are still interconnected by the capabilities and contributions they provide toward the achievement of that aim, though not physically adjacent. The principles of fragmentation and simultaneity in a noncontiguous environment can be exercised in similar ways with similar effects.

Momentum can take on a different form in a noncontiguous environment. Momentum in this environment may be expressed in terms of activity or tempo, versus

purely mass, exerted over time against multiple components to create a perception of vulnerability. The airborne force has great utility in a noncontiguous environment because of its range, responsiveness, and versatility. The force can preempt enemy actions, accelerate tempo and generate momentum in a noncontiguous framework by creating favorable combat power ratios in areas that attack decisive points and centers of gravity.

Limitations

Emerging information age technologies, integrated air defense systems and the proliferation of MANPADS systems necessitate greater integration of joint assets, an increased number of resources, deception and information operations to attain operational or strategic surprise. This intensifies the amount of planning and resources required, to mitigate risks and achieve appropriate levels of force protection. After insertion, sustaining the forces poses multiple challenges. Enemy air defense fires against resupply aircraft and long-range artillery and mortar fires on the DZ can hamper the delivery, collection, or distribution of critical supplies.[67] Beyond seventy-two hours the force relies on external support to sustain operations in the form of USAF assets, army aviation, or linking-up with a follow-on ground force.[68]

The force has limited ground and air mobility once delivered into the objective area. That mobility depends on the number and type of vehicles and helicopters that can be brought into the objective area. The airborne division possesses enough organic aviation to only lift two rifle companies. The force is not ideally suited to fight armor and motorized formations unilaterally due to its limited anti-armor capability. The division currently possesses 362 anti-armor systems split between TOWs and Javelins.[69]

Its light organic field artillery assets require augmentation to fight counter-battery and to suppress enemy air defense. Given these limitations, the force still provides significant strategic and operational capability to the current and future battlefields, because of its contributions to tempo, depth, simultaneity, surprise, and strategic agility.

V. Conclusion

The Soviet Army's concept of operational shock will continue to be relevant in the twenty-first century. The notion that Soviet Deep Operation Theory necessitates a force structure comparable to the one the Soviet Union fielded at the height of its industrial capabilities is invalid. The Soviet theory is built around the universal or operational aim of neutralizing the rival system's capability to achieve its aim by aggressively executing three operational principles --fragmentation, simultaneity, and momentum. Because a military system is composed of interconnected components possessing a physical and cognitive coherency, the opportunity to induce shock persists.

Current Army doctrine lacks a systemic logic that would assist in defining comprehensive operational principles and defining the rival force as military system. If planners and commanders choose to shock an enemy force, they must understand enemy strengths and how they are supported and maintained. These ideas are present in the Army's current doctrine in different forms and locations without significant operational coherency. The operational aim is not defined clearly beyond massing effects of firepower against decisive points to defeat the center of gravity through means of attrition.

Operation Desert Storm demonstrates a relevant and recent example of a JTF's (built inside of a multinational force) capacity to induce operational shock with a relatively small, but qualitatively superior force, using Soviet Deep theory. The coalition force, in 1991, attained operational shock through the precedence of cybershock versus deep maneuver. Expanding the theater of operations to create additional maneuver space,

possibly encompassing northern Saudi Arabia, XVIII Airborne Corps, VII Corps or the MEF potentially could have created an operationally significant mass center in the oppositions rear as a component of the coalition or joint force. The Inchon landing in September 1950 demonstrates another example of deep maneuver that presented the opportunity of exploiting operational maneuver and inducing shock, had the conceptual understanding existed.

The relevance of the Soviet Deep Operation Theory today is that it presents a systemic logic that attacks the enemy's military system cognitively and physically through the *balanced application* of attrition (precision deep fires and combat forces) and deep maneuver to make the opposition operationally irrelevant. The enemy is made operationally irrelevant when it loses the capacity to pursue its aim by negating its operational reserve, physical integrity, logistical throughput and/or hierarchical command and control structure.

The cybershock theory extends and enhances the Soviet concept by supplementing or complementing its operational principles.[70] The inclusion of the cybershock theory gives precedence to information operations (the manipulation of human controlled information processes) and presents a *balanced* theoretical concept that exercises three patterns of defeat –attrition, maneuver and cybershock in mutually supporting roles. This theoretical concept demonstrates the need for a balanced capabilities-based force that features light, air assault, airborne, mechanized infantry and armored forces to optimize capabilities within a JTF. To optimize *operational tempo, simultaneity, and momentum* the Armed Forces must attain greater strategic mobility in lift capacity and enhance light force tactical mobility.

The psychological effects that ensue through the presence of credible physical force (localized destruction capability) are tremendous and exponential when not anticipated. The 20 April 1999 shooting at Columbine High School in Littleton Colorado demonstrates the severity and expansive qualities of psychological shock. Two gunmen created absolute paralysis among hundreds of people both in and around a school building that persisted for several hours after the shooting had ended. The metaphysical effects of shock, which impairs cognitive abilities, persisted for 12 to 24 hours after the shooting for many involved. This demonstrates the psychological strength of a credible force arriving in a location achieved by surprise. The mind loses its physiological ability to function properly when shock is inflicted. This is especially apparent when faced with a complex problem set. This example, though tragic and out of context, demonstrates the strength of shock to create paralysis and disintegration.

Strategic attacks in both Iraq and Kosovo have recently demonstrated the ineptness of long-range precision bombing to attack and subjugate the will of the opposition. The Soviet population of Leningrad held out through a yearlong siege of continuous and unrelenting bombing during the German offensive into Russia. These examples act to reinforce the power of shock and its capacity to induce paralysis and subsequent disintegration when its manifested in a ground force that's pursuant and capable of destruction.

How is shock induced? Shock attacks the mind and will of the enemy. Shock builds a perception or mental model in the mind of the enemy that destruction and defeat are imminent. The origins of shock are created by surprise. The element of surprise is linked to several conditions that are related to the degree of shock. First, the degree of

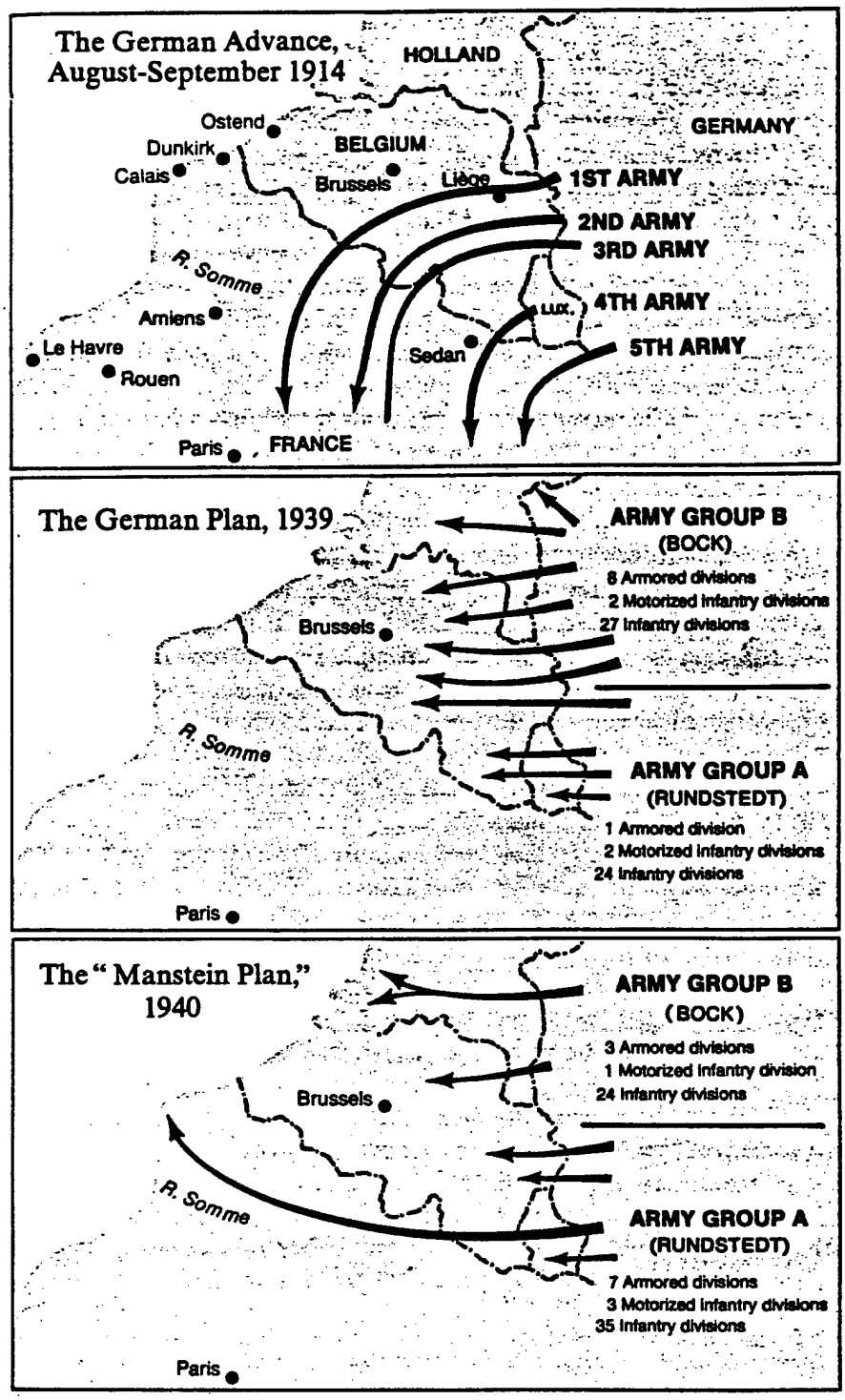
divergence, the arrival of force creates, counter to the anticipated flow of activity is directly related to the level of shock. Second, the lethality of the force operating in the unintended area in terms of mobility and firepower is related to the degree of shock. Last, the level of inability to respond and the degree the opposition is turned away from its intended aim, are also significant factors.

The division in its current configuration possesses a superb capacity to facilitate the inducement of shock by enhancing the operational dimensions of combat –time, tempo, depth and synchronization in the deep operations area. To optimize the division's capacity to induce shock the Army must attain the ability to insert a mobile force immediately behind the parachute assault to create an operationally significant force that can threaten centers of gravity. The integration of the airborne division within the JTF's battlefield framework can attain decisive operational effects contributing to the inducement of shock.

Military operations are an extension of political policy with unique aims, guidelines and restraints. When the exercise of force is required to subjugate the opposition to the will of a coalition, multinational, or joint force, operational shock is a relevant aim for defeating a rival system. Thus, the Soviet Deep Operations Theory is applicable in a contiguous or noncontiguous framework. Military systems are comprised of numerous integrated components both physically and cognitively, bound together by a central aim.[71] This state or condition provides the capacity for defeat by neutralizing the capability of the enemy system to achieve its aim or by neutralizing the systems ability to function cybernetically.

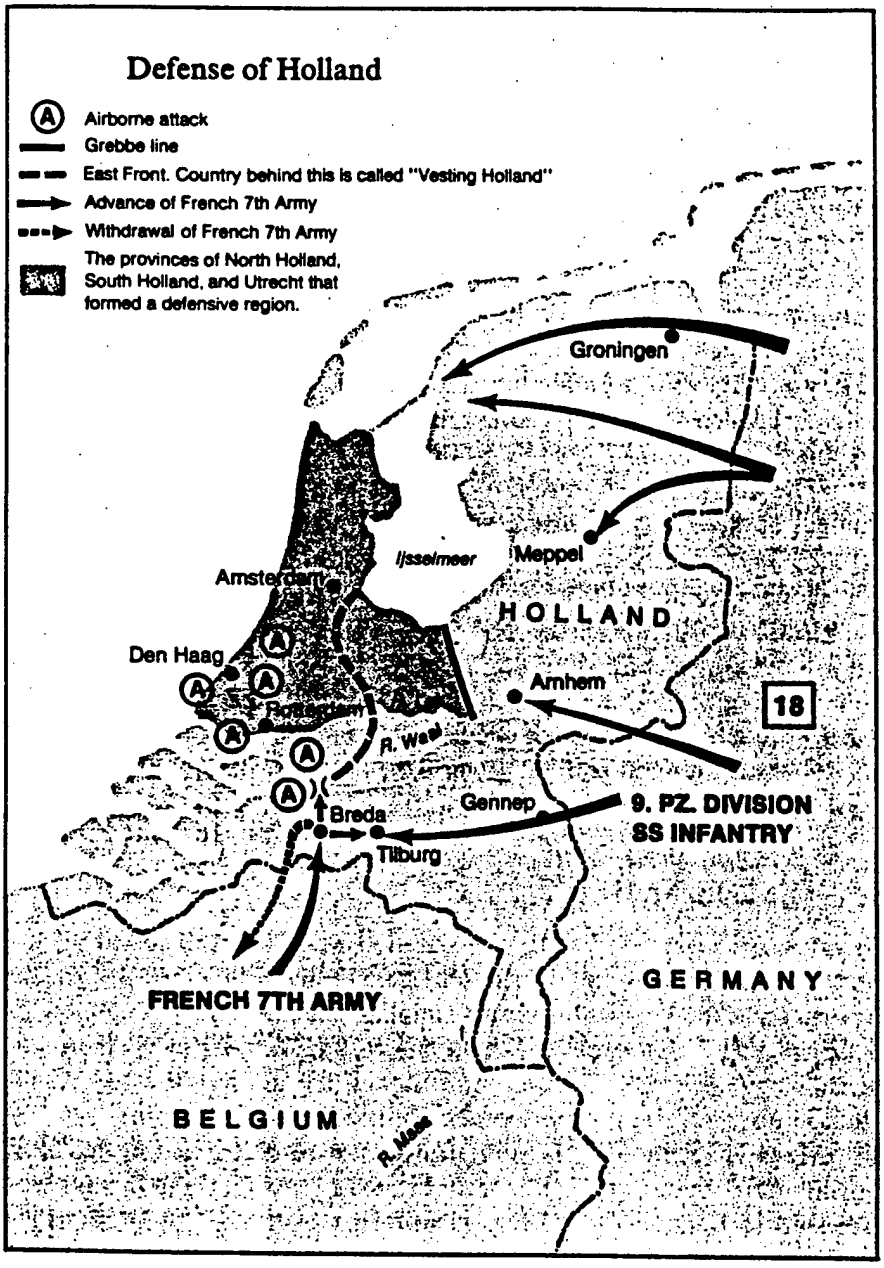
Operational shock must become the *central aim* of joint and operational doctrine

to maximize the synergistic effects of lethal and nonlethal force in the depth of a theater as the primary mechanism for defeating the enemy's military system. Central to this theoretical concept is seeing the enemy as a military system of interconnected components integrated in time and space physically and cognitively. The Army must use analytical tools that evaluate a rival system in terms of a systemic logic. To break the rival military system the Armed forces must use a balanced application of attrition, maneuver and cybershock processes. Finally the Army should examine the efficacy of the operational design concepts and the linkage to operational principles that create a *coherent and balanced application of force.*



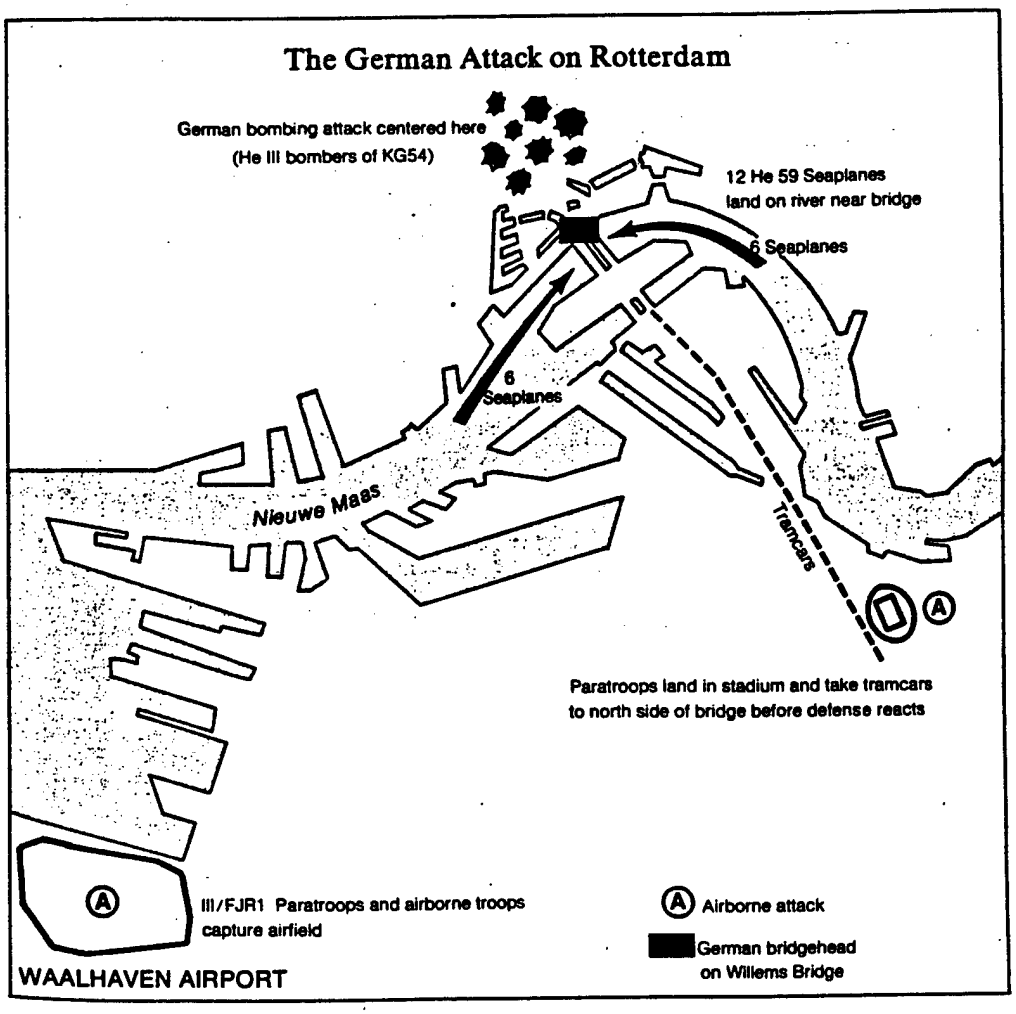
From the book Blitzkrieg: From the Rise of Hitler to the fall of Dunkirk by Len Deighton, The Battle for the River Meuse, pp. 183.

MAP 1 – Operation Yellow (version D, final plan)



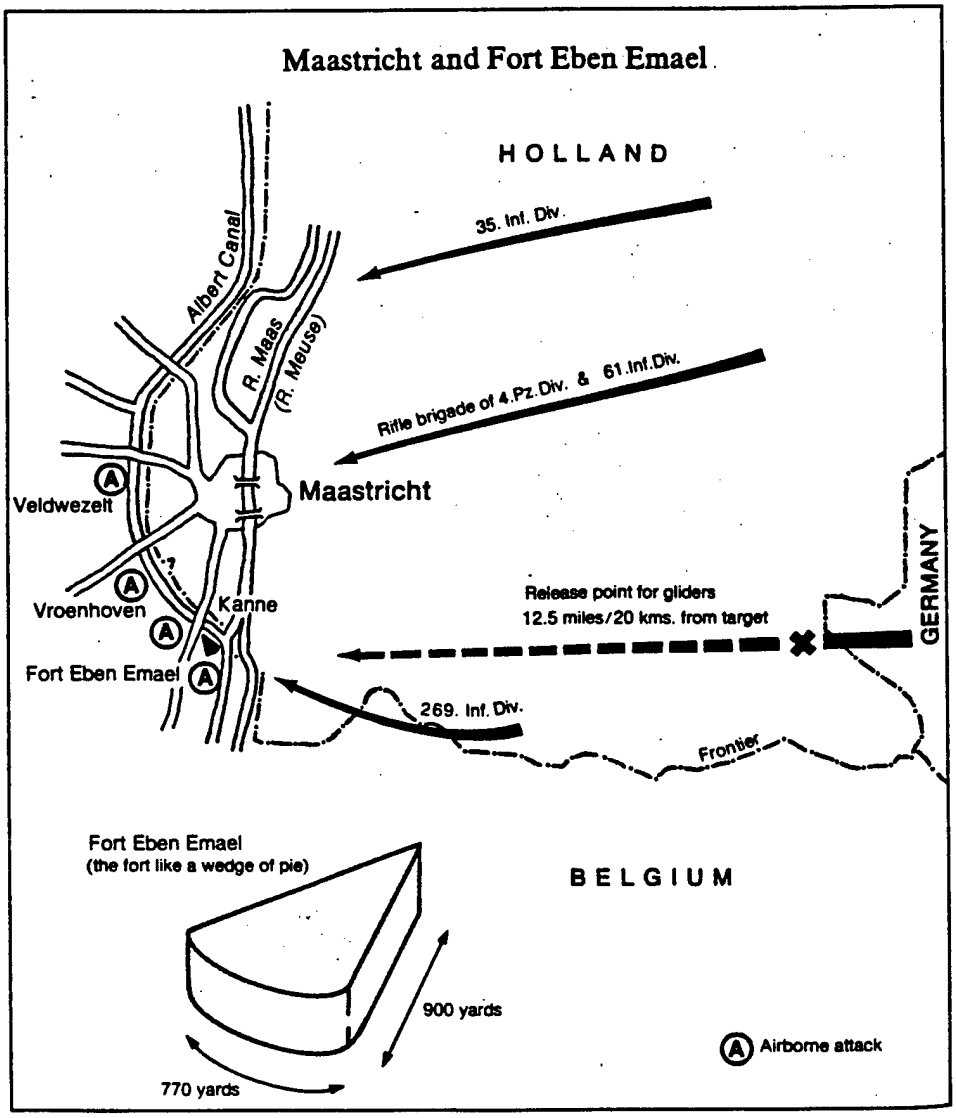
From the book Blitzkrieg: From the Rise of Hitler to the fall of Dunkirk by Len Deighton, Defense of Holland, pp. 193.

MAP 2 – Airborne Operations in Holland (overview)



From the book Blitzkrieg: From the Rise of Hitler to the fall of Dunkirk by Len Deighton, The German Attack on Rotterdam, pp. 197.

MAP 3 – Airborne Operations in Holland (Rotterdam)



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MAP 4 – Airborne Operations in Belgium

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